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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,894	02/01/2001	Haim Weissman	010077	8144

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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER	
SOBUTKA, PHILIP	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/775,894	WEISSMAN, HAIM	
	Examiner	Art Unit	
	Philip J. Sobutka	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. Claims 7, 8, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Cook et al. (Cook, US Patent No. 6,005,884).

Regarding claim 7, Cook teaches of a method for wireless communication, comprising: a) positioning a plurality of slave transceivers within an enclosed region (Figure 1 and column 1, lines 44 – 57), at least one of the slave transceivers comprising a slave central processing unit (slave-CPU), at least one of the slave-CPUs being a controlling slave-CPUs adapted to control an adjustable operational parameter of the slave transceiver that comprises the controlling slave-CPU (Figure 5 and column 22, lines 7 – 23); b) receiving, within one of the plurality of slave transceivers, a reverse radio frequency (RF) signal (Figures 1 and 5 and column 9, lines 18 – 33 and column 22, lines 7 – 23); and c) controlling, in the receiving slave transceiver, the adjustable operational parameter of the receiving slave transceiver in response to a characteristic of the reverse RF signal (Figures 1 and 5 and column 22, lines 7 – 23). Note that cook's method occurs in a wireless cellular system (Cook see especially figs 8C, 8D, col 30, lines 60-65, col 31, lines 9-15, col 35, lines 52-56).

Regarding claim 8, Cook teaches all the claimed limitations as recited in claim 7. Cook further teaches of wherein the adjustable operation parameter is the gain of an amplifier within the slave transceiver (column 21, lines 44 – 57 and column 22, lines 7 – 23).

Regarding claim 12, Cook teaches all the claimed limitations as recited in claim 7. Cook further teaches of comprising: a) receiving an instruction in a slave-CPUs from a management unit (column 19, lines 41 – 58); b) in the receiving slave-CPU, setting at least one adjustable operational parameter of the slave transceivers comprising the receiving slave-CPU to initial values in response to the received instruction (column 19, lines 41 – 58 and column 22, lines 7 – 22).

Claim Rejections - 35 USC § 103

2. Claims 1, 3 – 6, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (Cook, US Patent No. 6,005,884) in view of Heiman et al. (Heiman, US Patent No. 6,002,918).

Consider claim 1, Cook teaches of 1. An apparatus for wireless communication, comprising: a) a plurality of slave transceivers spatially separated from one another within an enclosed region (Figure 1 and column 1, lines 44 – 57), each of the slave transceivers comprising an associated slave central processing unit (slave-CPU), each slave-CPU being adapted to control at least one adjustable operational parameter of its associated slave transceiver in response to at least one characteristic of a received reverse radio frequency (RF) signal (Figure 5 and column 22, lines 7 – 23), and each slave transceiver being adapted to: i) receive the reverse RF signal (Figures 1 and 5 and column 9, lines 18 – 33); ii) process the received RF signal based on at least one of the adjustable operational parameters (Figure 5 and column 22, lines 7 – 23); and iii) generate a reverse slave signal; and (column 9,lines 18 – 33) b) a master transceiver coupled the plurality of slave transceivers (Figure 1 and column 9, lines 34 – 43), the

master transceiver being adapted to: i) convey setting signals to the plurality of slave transceivers so as to set the adjustable operational parameters thereof (column 19, lines 41 – 58); ii) receive and process the reverse slave signals from the plurality of slave transceivers, so as to generate corresponding reverse master signals (Figure 1 and column 10, lines 49 – 58 and column 9, lines 34 – 48); and iii) convey the reverse master signals to at least one [base station transceiver subsystem (BTS)] computer external to the region Figure 1 and column 9,lines 13 – 18). Cook does not specifically teach of one base station transceiver subsystem (BTS). In a related art dealing with wireless local area networks, Heiman teaches of a base station transceiver (column 2, lines 49 –55). It would have been obvious to one skilled in the art at the time of invention to have included into Cook's repeater system, Heiman's computer functioning as a base station transceiver, for the purposes of allowing improved selection by a mobile to an access point (or base station, as Cook states the two are the same in column 1, lines 28 – 32) for communication when in the access point's coverage, as taught by Heiman.

As to claim 3, Cook in view of Heiman, teach all the claimed limitations as recited in claim 1. Cook further teaches of further comprising a management unit adapted to convey instructions to the plurality of slave-CPUs to set at least one of the adjustable operational parameters of at least one of the slave transceivers to initial values (column 19, lines 45 – 58).

As to claim 4, Cook in view of Heiman, teach all the claimed limitations as recited in claim 3. Cook further teaches of wherein the master transceiver is coupled to the

BTSs (Figure 1) and adapted to: b) generate corresponding forward master signals (column 19, lines 45 – 58 and column 10, lines 49 – 53); and c) convey the forward master signals to the plurality of slave transceivers (column 19, lines 45 – 58); and wherein each slave transceiver is adapted to: a) receive the forward master signals (column 19, lines 45 – 58); and b) generate corresponding forward slave RF signals (column 19, lines 45 – 58 and column 20 , lines 1 – 10); and wherein each slave-CPU is adapted to: a) monitor the generated forward slave signals (column 19, lines 45 – 58 and starting column 20, line 60 and ending column 21, line 4); b) to adjust at least one of the operational parameters from an initial value in response to the generated forward slave signals (column 19, lines 45 – 58 and starting column 20, line 60 and ending column 21, line 4 and column 22, lines 7 – 22). Cook does not specifically teach of a) receive and process forward RF signals from the BTSs (note Cook makes provisions of using an alternate form of link for the LAN or WAN backbone in column 13, lines 4 – 7). In a related art, Heiman teaches of a) receive and process forward RF signals from the BTSs (column 1, lines 28 – 40). It would have been obvious to one skilled in the art at the time of invention, to have replaced Cook's wired local area communications link with Heiman's wireless local area communications link, for the purposes of added mobility and elimination of no coverage areas, as taught by Heiman.

As to claim 5, Cook in view of Heiman, teach all the claimed limitations as recited in claim 4. Cook further teaches of wherein the slave-CPU is further adapted to adjust at least one of the operational parameters from an initial value in response to the generated reverse slave signals (column 19, lines 45 – 58 and column 22, lines 7 – 22).

As to claims 6 and 14, Cook in view of Heiman, teach all the claimed limitations as recited in claims 4 and 13. Cook further teaches of wherein the master transceiver comprises a master-CPU which is adapted to monitor at least some of the slave-CPUs (column 19, lines 45 – 58) and, in response to the slave-CPUs and to initial instructions received from the management unit, to vary at least one of a group comprising a number of BTSs communicating with the master transceiver and at least one channel parameter of each BTS (column 10, lines 59 – 64).

As to claim 15, Cook teaches of an apparatus for wireless communication, comprising: a) a first plurality of slave transceivers which are spatially separated from one another within an enclosed region (Figure 1 and column 1, lines 44 – 57), each of which slave transceivers is adapted to receive a reverse radio frequency (RF) signal generated by a mobile transceiver within the region (Figure 1 and column 9, lines 8 -17) and to process the RF signal, based on at least one adjustable operational parameter, so as to generate a reverse slave signal (column 22, lines 7 – 23), each of the slave transceivers comprising an associated slave central processing unit (slave-CPU) which is adapted to control at least one of the adjustable operational parameters of the slave-CPU's associated slave transceiver in response to at least one characteristics of the reverse RF signal (column 22, lines 7 – 23); and b) a second plurality of master transceivers, which are coupled to receive and process the reverse slave signals from the first plurality of slave transceivers so as to generate corresponding reverse master signals (Figures 1 – 3 and column 9, lines 25 – 39), and to convey the reverse master signals to a third plurality of computers [base station transceiver subsystems (BTSs)]

external to the region (Figures 1 –3 and column 9, lines 34 –48), and which are adapted to convey setting signals to the first plurality of slave transceivers so as to set the adjustable operational parameters thereof (column 10, lines 49 –58). Cook does not specifically teach of base station transceiver subsystems (BTSs). In a related art dealing with wireless local area networks, Heiman teaches of base station transceiver subsystems (BTSs) (column 2, lines 49 –55). It would have been obvious to one skilled in the art at the time of invention to have included into Cook's repeater system, Heiman's computer functioning as a base station transceiver, for the purposes of allowing improved selection by a mobile to an access point (or base station, as Cook states the two are the same in column 1, lines 28 – 32) for communication when in the access point's coverage, as taught by Heiman.

3. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (Cook, US Patent No. 6,005,884) in view of Heiman et al. (Heiman, US Patent No. 6,002,918) or Cook et al. (Cook, US Patent No. 6,005,884) as applied to claims 1 and 7 above, respectively, and further in view of Ames (Ames, US Patent No. 5,233,626).

Regarding claims 2 and 11, Cook in view of Heiman, teach all the claimed limitations as recited in claims 1 and 7. Cook further teaches of diversity antennas (starting column 28, line 66 and ending column 29 line 10). Cook in view of Heiman do not specifically teach of wherein the plurality of slave transceivers comprises at least one diversity transceiver and at least one main transceiver, wherein the RF signals received by the diversity transceivers are substantially different from the RF signal

received by the main transceivers. In a related art dealing with spread spectrum receivers in repeaters, Ames teaches of wherein the plurality of slave transceivers comprises at least one diversity transceiver and at least one main transceiver, wherein the RF signals received by the diversity transceivers are substantially different from the RF signal received by the main transceivers (Figure 2 and column 4, lines 51 – 56). It would have been obvious to one skilled in the art at the time of invention to have included into Cook and Heiman's repeater system, Ames' diversity receivers, for the purposes of mitigating multi-path interference (especially as the system is indoor) and thus improving performance, as taught by Ames.

4. Claim 9, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (Cook, US Patent No. 6,005,884) as applied to claim 7 and 12 above, and further in view of Heiman et al. (Heiman, US Patent No. 6,002,918).

Regarding claim 9, Cook teaches all the claimed limitations as recited in claim 7. Cook further teaches of further comprising; a) generating an alternative frequency (AF) reverse slave signal in the receiving slave transceiver in response to the reverse RF signal (Figures 2 and 3 and column 14, line 42 – 56); b) receiving the AF reverse slave signal in a master transceiver (Figure 2 and 3, column 15, lines 15 – 33); c) in the receiving master transceiver in which the reverse slave signals were received frequency converting the received AF reverse slave signal to an RF reverse master signal (Figure 3 and column 16, lines 52 – 60); d) conveying the reverse master signal to a computer [base station transceiver subsystem (BTS)] external to the region (Figures 2 and 3 and starting column 18, line 63 and ending column 19, line 8). Cook does not specifically

teach of to base station transceiver subsystem (BTS) (note Cook makes provisions of using an alternate form of link for the LAN or WAN backbone in column 13, lines 4 – 7). In a related art dealing with wireless local area networks, Heiman teaches of a base station transceiver (column 2, lines 49 –55). It would have been obvious to one skilled in the art at the time of invention to have included into Cook's repeater system, Heiman's computer functioning as a base station transceiver, for the purposes of allowing improved selection by a mobile to an access point (or base station, as Cook states the two are the same in column 1, lines 28 – 32) for communication when in the access point's coverage, as taught by Heiman.

As to claim 10, Cook in view of Heiman, teach all the claimed limitations as recited in claim 9. Cook further teaches of comprising; a) conveying a setting signal from the receiving master transceiver to the receiving slave transceiver; (column 19, lines 41 – 58 and starting column 20, line 60 and ending column 21, line 4 and column 22, line 7 – 23) and b) in response to the conveyed setting signal, adjusting, at least one operational parameter of the receiving slave transceiver (column 19, lines 41 – 58 and starting column 20, line 60 and ending column 21, line 4 and column 22, line 7 – 23).

As to claim 13, Cook teaches all the claimed limitations as recited in claim 12. Cook further teaches of comprising: b) generating forward master AF signals [in response to the received forward master RF signals] (Figures 1 – 3 and column 10, lines 49 – 53 and column 19, lines 45 – 58) conveying the forward master signals to the plurality of slave transceivers (Figure 1 –3 and column 19, lines 45 – 58), d) in the plurality of slave transceivers, receiving the forward master AF signals (Figure 1 –3 and

5 and column 19, lines 45 – 58); e) in the plurality of slave transceivers, generating forward slave RF signals in response to the received forward master AF signals (Figure 1 –3 and 5 and column 19, lines 45 – 58 and column 20 , lines 1 – 10); f) monitoring the corresponding forward slave RF signals in each of the slave transceivers (column 19, lines 45 -58 and starting column 20, line 60 and ending column 21, line 4); and g) varying at least one of the operational parameters of each of the slave transceivers from their initial values, in response to the forward slave RF signals and reverse slave RF signals (column 19, lines 45 -58 and starting column 20, line 60 and ending column 21, line 4 and column 22, lines 7 – 22). Cook does not specifically teach of receiving in the forward master RF signals from the BTS (note Cook makes provisions of using an alternate form of link for the LAN or WAN backbone in column 13, lines 4 – 7). In a related art, Heiman teaches of receiving in the forward master RF signals from the BTS (column 1, lines 28 – 40). It would have been obvious to one skilled in the art at the time of invention, to have replaced Cook's wired local area communications link with Heiman's wireless local area communications link, for the purposes of added mobility and elimination of no coverage areas, as taught by Heiman.

5. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (Cook, US Patent No. 6,005,884) in view of Heiman et al. (Heiman, US Patent No. 6,002,918) as applied to claim 15 above, and further in view of Brozovich et al. (Brozovich, US Patent No. 5,661,434).

Regarding claim 16, Cook in view Heiman; teach all the claimed limitations as recited in claim 15. Cook further teaches of communicates with at least one of the third

plurality of BTSs (column 9, lines 44 – 48) and a master-CPU (column 19, lines 45 – 54). Cook in view of Heiman do not specifically teach of wherein each of the master transceivers comprises a switch and a third plurality of gain elements and wherein the master-CPU of each master transceiver is adapted to operate the switch and the third plurality of gain elements of the associated master transceiver so that the associated master transceiver communicates via the third plurality of gain elements. In a related art dealing with wireless local area network amplifiers, Brozovich teaches of wherein each of the master transceivers comprises a switch and a third plurality of gain elements (Figures 2A and 2B and starting column 1, line 63 and ending column 2, line 10) and wherein the master-CPU of each master transceiver is adapted to operate the switch and the third plurality of gain elements of the associated master transceiver so that the associated master transceiver communicates via the third plurality of gain elements (Figures 2A and 2B and starting column 1, line 63 and ending column 2, line 10). It would have been obvious to one skilled in the art at the time of invention to have included into Cook and Heiman's repeater system, Brozovich's switched amplifiers, for the purposes of higher efficiency amplification, thus resulting in prolonged battery life, as taught by Brozovich.

As to claim 17, Cook, in view of Heiman and Brozovich, teach all the claimed limitations as recited in claim 16. Cook further teaches of wherein each of the master transceivers is adapted to adjust a bandwidth of at least some of the slave transceivers responsive to the number of BTSs being communicated (column 16, lines 37 – 51) and

Brozovich further teaches of with via the third plurality of gain elements (Figures 2A and 2B and starting column 1, line 63 and ending column 2, line 10).

Response to Arguments

6. Applicant's arguments filed 20 July 2004 have been fully considered but they are not persuasive.

7. In response to applicant's argument that Cook teaches against use in a cellular system, note that the passage cited by applicant merely recites Cooks arrangement's differences with a conventional cellular system. As now noted in the rejection above Cook in fact refers to the base station coverage of his system as a cellular arrangement Even if applicant were correct in that a method such as that taught by Cook could not be performed by a cellular system, then how could the applicant's system be a cellular system?

8. It should be noted that Cook does detail differences with the conventional cellular arrangement, and perhaps if the applicant could better detail the specifics of the conventional cellular system in the body of the claims then they might be able to distinguish over the cited art where the mere recitation of a cellular system does not.

Conclusion

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J. Sobutka whose telephone number is 703-305-

4825, after March 2005 the number will change to (571) 272-7887. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Philip Sobutka
(703) 305-4825

February 20, 2005

NAY MAUNG
SUPERVISORY PATENT EXAMINER